US 20210320847A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2021/0320847 A1

ALTSHULER et al. (43) Pub. Date: Oct. 14, 2021

(54) **SYSTEMS AND METHODS FOR NETWORK STABILIZATION PREDICTION**

(71) Applicant: **Netz Forecasts Ltd.**, Tel-Aviv (IL)

(72) Inventors: **Yaniv ALTSHULER**, Ramat Yishay (IL); **Shahar SOMIN**, Rehovot (IL); **Goren GORDON**, Rishon LeZion (IL)

(73) Assignee: **Netz Forecasts Ltd.**, Tel-Aviv (IL)

(21) Appl. No.: **17/284,801**

(22) PCT Filed: **Oct. 10, 2019**

(86) PCT No.: **PCT/IL2019/051108**

§ 371 (c)(1),
(2) Date: **Apr. 13, 2021**

Related U.S. Application Data

(60) Provisional application No. 62/745,474, filed on Oct. 15, 2018.

Publication Classification

(51) **Int. Cl.**
H04L 12/24 (2006.01)
H04L 12/26 (2006.01)

(52) **U.S. Cl.**
CPC ***H04L 41/142*** (2013.01); ***H04L 41/147*** (2013.01); ***H04L 43/045*** (2013.01); ***H04L 41/0893*** (2013.01); ***H04L 41/145*** (2013.01)

(57) **ABSTRACT**

There is provided a method for evaluating a network comprising: providing graphs each indicative of a respective sequential snapshot of a dynamic graph obtained over a historical time interval, the dynamic graph denoting the network, computing sets of meta-parameters, each set of meta-parameters computed according to a respective graph of the graphs, wherein each one of the meta-parameters denotes a network level parameter computed according to a plurality of at least one of edges and nodes of the respective graphs, analyzing sets of meta-parameters according to values computed based on a physics-based analytical model of an evolving physical system, and predicting a likelihood of stabilization of the network during a future time interval according to an indication of convergence of the values according to a convergence requirement, computed based on the physics-based analytical model during the future time interval.